

App. No. 10/750,520

Reply to Office action of December 1, 2004

Amendments to the Claims:

1 to 12. (canceled).

13. (currently amended) A method for consolidating a shaped nanophase metal powder, comprising the steps of:

encompassing said shaped nanophase metal powder with a flowable pressure transmitting medium that is heated to a first temperature;

compressing said heated medium at said first temperature and thereby consolidating said shaped nanophase metal powder;

heating said medium to a second temperature that is higher than said first temperature;
and

compressing said heated medium at said second temperature and thereby further consolidating said shaped nanophase metal powder.

14. (original) The method according to claim 13, wherein said second temperature ranges between about 700 °F and about 1000 °F.

15. (original) The method according to claim 14, wherein said second temperature ranges between about 775 °F and about 875 °F.

16. (original) The method according to claim 13, wherein said first temperature ranges between about 700 °F and about 1000 °F.

App. No. 10/750,520

Reply to Office action of December 1, 2004

17. (original) The method according to claim 16, wherein said first temperature is about 700 °F.

18. (original) The method according to claim 13, wherein said each compressing step comprises mechanically compacting said heated medium to consolidate said powder.

19. (original) The method according to claim 18, wherein said mechanically compacting is performed using a hydraulic press.

20. (currently amended) The method according to claim 13, wherein said shaped powder is shaped by enclosing said powder in a container, said powder is remaining enclosed in a said container during said encompassing step[[,]] during which said container is also being encompassed with said medium.

21. (original) The method according to claim 20, wherein said container is formed of a material that is sufficiently thin to have a negligible effect on consolidating said powder when said medium is compressed.

22. (original) The method according to claim 13, further comprising:

prior to said consolidating step, cryomilling and degassing said powder.

23. (original) The method according to claim 13, wherein said powder is a nanophase metal selected from the group consisting of aluminum, iron, aluminum alloys, and iron alloys.

App. No. 10/750,520

Reply to Office action of December 1, 2004

24. (original) The method according to claim 23, wherein said powder is nanophase aluminum.

25. (new) The method according to claim 13, wherein said shaped powder is a preform mass.